

REMARKS

Claims 1-30 are pending in the application. Claims 28-30 have been cancelled by this amendment. Claims 20-27 have been withdrawn from consideration. Therefore, claims 1-27 are at issue.

The examiner deemed the restriction requirement as final based on the contention that the common technical feature of adding a clay to superabsorbent polymer (SAP) during a surface crosslinking step lacks novelty. As discussed below in connection with the art-based rejection of claims 1-19, all pending claims 1-27 have a common technical feature of adding at least 12% by weight of a clay to SAP particles during a surface crosslinking process, which is novel and nonobvious. Accordingly, applicants request that the examiner reconsider the restriction requirement, and rejoin claims 20-27 for the reasons set forth below and in the Response mailed November 22, 2005, i.e., unity is not lacking between claims of different categories having a common technical feature that is novel and nonobvious.

Claims 1-5 and 7-17 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sun et al. U.S. Patent No. 6,124,391 ('391). Claim 6 stands rejected under 35 U.S.C. §103 as being obvious over the '391 patent. Claims 18 and 19 stand rejected under 35 U.S.C. §103 as being obvious over the '391 patent in view of Beerse et al. U.S. Patent Publication 2002/0006886 ('886 publication).

The basis of these rejections is that the '391 patent discloses the use of clays as anticaking and dedusting agents. For the reasons set forth below,

it is submitted that the present claims are neither anticipated by nor obvious over the '391 patent.

The '391 patent discloses the preparation of dried SAP particles, admixing the dried SAP particles with 0.2 to 10 wt% of an inorganic powder and a surface crosslinking agent (column 7, lines 27-32 and 43-45), and heating of the mixture. The inorganic powders can be a clay. The inorganic powder can be added to the SAP particles before, during, or after the surface crosslinking step. Importantly, the '391 patent specifically discloses that the clay is added to the SAP particles in an amount sufficient to achieve anticaking properties, up to a *maximum* of 10 wt%, and preferably *less* than 10 wt%, (see '391 patent, column 7, lines 27-32). Additionally, the examples of the '391 patent are SAP particles having a clay concentration of 0.5 to 3 wt%.

As stated above, the '391 patent is directed to incorporating an anticaking and dedusting amount of an inorganic powder to SAP particles. The *maximum* amount of inorganic powder added to the SAP particles, as disclosed in the '391 patent, is 10 wt%. In contrast, the present claims specifically a *minimum* amount clay of about 12%, by weight. Accordingly, because the '391 patent does not recite every element of the claims, the '391 patent cannot anticipate the present claims under 35 U.S.C. §102(b).

In addition, the differences between the '391 patent disclosure and present claims are nonobvious differences. The '391 patent discloses amounts of inorganic powder that typically are used in the art to impart anticaking and dedusting properties to SAP

particles. The '391 patent contains no teachings or suggestions that would motivate a person skilled in the art to increase the amount of inorganic powder above the disclosed maximum limit of about 10%, by weight. In fact, persons skilled in the art would have had no incentive to increase the amount of inorganic powder above about 10 wt%, because the '391 patent teaches that dedusting is achieved at inorganic powder amounts well below 10 wt% (e.g., see '391 examples).

Therefore, persons skilled in the art would consider using any amounts of clay above 10 wt% as being wasted.

However, applicants have found that including a clay in the surface crosslinking step, in the claimed amount of about 12% to about 35%, by weight, provides the unexpected benefits of reducing the amount of fine-sized SAP particles and improving the permeability of the clay-treated SAP particles. See specification, page 7, lines 32-35, and page 8, lines 12-16, for example.

Applicants further have provided objective evidence demonstrating the new and unexpected results provided by the presently claimed invention. In each of Examples 5 and 6, at pages 30-33 of the specification, applicants provide a series of SAPs containing varying amounts of clay added to the SAP during the surface crosslinking step. Example 5, in the table at page 30, shows that an amount of clay disclosed in the '391 patent, i.e., 5% and 10 wt%, generates 20% and 16 wt%, respectively, of SAP particles having a diameter less than 200 μm (i.e., fine-sized SAP particles). By increasing the amount of clay to 15 wt% in accordance with presently claimed

invention, fine-sized particles having a diameter less than 200 μm drops substantially to 4.5 wt%. Further increasing the amount of clay up to 35 wt% results in further decreases in the amount of fine-sized SAP particles.

The table of Example 5 also shows a substantial increase in fluid permeability in SAP particles having 15 wt% or more clay (inventive) over SAP particles having 5 wt% or 10 wt% clay (comparative and within the '391 disclosure). See SFC data in the table of Example 5. The importance of a high SFC value as relating to SAP particle permeability is discussed at page 28, line 17-26 of the specification. The table of Example 6 of the specification contains similar results with respect to both reducing the amount of fine-sized and improving SAP particle permeability when a clay is present in an amount recited in the claims. Notably, the SAP particles also performed well with respect to absorption properties even in the presence of high amounts of clay (see specification, page 33, lines 1-3 and AUL and CRC data in the tables of Examples 5 and 6).

These results are unexpected in view of the teachings of the '391 patent, which are limited to a maximum of 10 wt% inorganic powder added to SAP particles to provide anticaking and dedusting properties. The '391 patent absolutely fails to teach or suggest using greater amounts of an inorganic powder for any purpose. Persons skilled in the art certainly would have had no incentive from the '391 patent to increase the amount of clay added to SAP particles with any reasonable expectation of substantially reducing the

amount of fine-sized SAP particles and improving SAP particle permeability, while also retaining SAP particle absorption properties.

Therefore, for the reasons set forth above, it is submitted that not only are claims 1-5 and 7-17 novel over the '391 patent, but also that claims 1-17 would not have been obvious over the '391 patent under 35 U.S.C. §103.

With respect to claims 18 and 19, the '886 publication does not overcome the deficiencies of the '391 patent. The '886 publication merely discloses well known quaternary ammonium compounds. The quaternary ammonium compounds of the '886 publication are not incorporated into clay particles to provide an organophilic clay as required in claims 18 and 19, and furthermore the '886 publication is not remotely directed to SAP particles. In fact, the quaternary ammonium compounds of the '886 publication are disclosed as non-lathering cationic surfactants. Therefore, persons skilled in the art would have had absolutely no motivation or incentive to consider combining any teaching from the nonanalogous '886 publication with the '391 patent. Further, even if such a combination was considered, the combination of references would not lead a person skilled in the art to incorporate a standard cationic surfactant of the '886 publication into a clay (which ties up the quaternary ammonium surfactant), then incorporate such a treated clay in the presently claimed amount into SAP particles during a surface-crosslinking step. Such jumps in reasoning to arrive at the presently claimed

invention are not remotely suggested by the combination of the '391 patent and the '886 publication.

For all the reasons set forth above, it is submitted that claims 1-19 are neither anticipated under 35 U.S.C. §102(b) by the '391 patent nor obvious over the '391 patent, alone or in combination with the '886 publication, and that the present rejections should be withdrawn. It also is submitted that claims 20-27 should be rejoined into the application because the common technical feature of all claims 1-27 is novel and nonobvious.

The pending claims are in a form and scope for allowance. An early and favorable action on the merits is respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form in an effort to advance this application toward allowance, the examiner is urged to telephone the undersigned at the indicated number.

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN LLP

By



James J. Napoli
(Registration No. 32,361)
Attorneys for Applicants
6300 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606
(312) 474-6300

Chicago, Illinois
March 10, 2006